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APPLICATION FOR LETTERS PATENT

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**APPARATUS FOR ROUGHING EDGES OF
CONCRETE CASTED BLOCKS**

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INVENTORS

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TITLE OF THE INVENTION

APPARATUS FOR ROUGHING EDGES OF CONCRETE CASTED BLOCKS

FIELD OF THE INVENTION

- 5 The present invention relates to casted concrete blocks, and more particularly, to an apparatus for roughing blocks to give them a worn or rough appearance.

BACKGROUND OF THE INVENTION

- 10 Casted concrete blocks have a rectangular configuration in which the surfaces are substantially planar with adjacent surfaces delimited by sharp edges.

It has been known to treat the concrete blocks in order to get a more natural rough look which is typical of an authentic stone block.

- 15 Various apparatuses have been devised in order to provide this rough surface appearance to concrete casted blocks. For example, US patent No. 6,561,786 issued May 13, 2003 and US patent No. 6,575,727 issued June 10, 2003, both in the name of Techo-Bloc Inc. describe an apparatus for roughing surfaces of concrete casted blocks wherein the surfaces to be roughened are impacted by means of chain links attached to a disk rotatably driven by a drive shaft. Means
20 are provided to mount the blocks so that the chain links may abrade the edges of the blocks. Another apparatus is described in US patent 6,109,906 to Castonguay *et al.* for treating concrete blocks and includes flails mounted to a drive shaft which is adapted to rotate in opposite directions provide a balanced
25 distribution of impacts at the corners of the blocks.

It has been found that the devices described in the prior art provide, through a chiseling effect, an abrasion of the edges of the blocks causing them to burst.

30 **OBJECTS AND STATEMENT OF THE INVENTION**

It is an object of the present invention to overcome the above problem associated with the present method of roughing edges of solid concrete casted blocks.

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This is achieved by exert a crumbling effect along the edges thus providing them with a rounded appearance. This is achieved by impacting the edges at an angle of about 45°.

5 The present invention therefore provides an apparatus for roughing edges of solid concrete casted blocks which comprises:

a block support conveyor for supporting and conveying a series of blocks;
at least one roughing device disposed at a given distance from a block to
be roughened; the device including at least one rigid impacting arm having one
10 end connected to a drive shaft, having an axis, and an opposite end connected to
an impacting element; the shaft is connected to drive means allowing the shaft to
define an arcuate reciprocating motion causing the impacting element to impact
the block and to crumble concrete from the edge of the block; the rigid arm
impacting the edge at an angle of about 45° relative to the axis of the drive shaft;
15 and

means securing the block during impact.

In one form of the invention, the roughing device is formed of a series of
impacting arms adjacently disposed to one another.

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In another form of the invention, the roughing device includes a second series of
impacting arms disposed adjacently to one another and mounted to the shaft at
about 90° relative to the first series of impacting arms.

25 In a further embodiment of the present invention, there is provided a second drive
shaft which is parallel to the axis of the first drive shaft and which includes one or
more roughing devices as described above.

30 Other objects and further statement of the invention will be evident from the
description given hereinafter.

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IN THE DRAWINGS:

Figure 1 is a schematic perspective view of one embodiment of an apparatus made in accordance with the present invention;

Figure 2 is a cross-sectional view taken along lines 2-2 of figure 1; and

5 Figure 3 is a cross-sectional view taken along lines 3-3 of figure 1.

DESCRIPTION OF PREFERRED EMBODIMENTS:

Referring to figure 1, there is shown an apparatus, roughing edges of solid concrete casted blocks (four being shown as A1, A2, B1 and B2).

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After having being split to form individual blocks, the latter are supported and conveyed on two conveyors C and D disposed parallel to one another. In the space between the two conveyors are mounted a series of roughing devices.

15 A first roughing device comprises a motor M1 adapted to drive a shaft S1 on which is mounted a series of impacting arms (six being shown as 10), each displaying at its free end an impacting element 12 so disposed as to contact the edge E1 of block A1 at a 45° angle.

20 A second series of impacting arms 14 is disposed at about a 90° angle relative to the arms 10. Arms 14 are mounted to the shaft S1 and are adapted to contact by means of their impacting elements 16 the upper edge E2 on the block B1. Motor M1 is adapted to provide a reciprocating motion of the shaft S1 and of the arms 10 and 14.

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In another embodiment of the present invention, there is provided a second motor M2 driving shaft S2 to which is mounted, on one side, a series of impacting arms 18 with their respective impacting elements 20 which contact the lower edge E3 of block B2. On the other side of shaft S2, a series of impacting arms 22 is

30 mounted, each arm having an impacting element 24 to contact the lower edge E4 of block A2.

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As shown in figures 2 and 3, the apparatus of the present invention comprises securing means 30, 32, 34 and 36 each consisting of a cylinder 30A and of a rubber 30B to secure the blocks during the impact operation.

- 5 One suitable impacting element is one made of an impact resistant material, such as metal, and has a cylindrical shape.

Although the shaft arrangements illustrated in the drawings are longitudinally spaced from one another in the space between the conveyors, it is foreseen that
10 some arrangement could be provided to have a single shaft with four sets of roughening devices 10-12, 14-16, 18-20 and 22-24 mounted thereon at 90° relative to one another or to have the two shafts S1 and S2 parallel to one another so that the upper and lower edges could be roughened simultaneously. Also, there are various ways to present the blocks for the roughening operation;
15 for example, means could be provided to lift them to a roughening position. However, such mechanisms do not form part of the present invention.

It is therefore wished that the present invention should not be limited in interpretation, except by the terms of the following claims.